

Original article

Prevalence of Gastrointestinal Tract Cancer in Western Part of Libya

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ABSTRACT

Background and aims. Cancer incidence rates are rising globally, and in Libya they have been rising over the past ten years. However, little research has been done on gastrointestinal tract cancer incidence rates and distribution, which is crucial for understanding local epidemiology and cancer control. The aim of this study was to demonstrate the high incidence of gastrointestinal tract cancer in Libya. **Methods.** From 2015 to 2021 a primary care polyclinic (family physician unit) in Janzour (western Tripoli-Libya) enrolled 2950 patients for this retrospective observational randomized study. **Results.** The study's finding showed that between January 2015 and December 2021, there were 2950 patients who visited the family physician's office. Of those, six patients had been diagnosed as gastrointestinal cancer, including two males who had been diagnosed with colorectal cancer and four females who had been diagnosed with hepatocellular carcinoma (HCC) in two of them, while the other two colorectal cancers, with a male to female ratio 1:2. All of the cases were middle-aged (50 ± 10) years, the patients all complained of abdominal pain. All these gastrointestinal tract cancer patients resided within a 1-2 Kilometer radius of the family physician unit (a tiny geographic area of roughly 4 Km²). This study demonstrates that six patients out of 2950 patients complaining of abdominal pain, were diagnosed with gastrointestinal tract cancer; this equates to 1 case per 500 patients attending a family physician. **Conclusion.** Research, education for medical professionals, screening, and discussion of the significance of ongoing epidemiological and etiological investigations are all required due to the increased incidence of gastrointestinal tract cancer in Libya.

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INTRODUCTION

The overall burden of cancer is rapidly increasing worldwide, reflecting not only population growth and aging, but also the prevalence and spread of risk factors. Gastrointestinal (GI) cancers, including oropharyngeal, esophageal, stomach, liver, pancreatic, and colorectal cancers, represent more than a quarter of all cancers: moreover, their prevalence is continuously increasing [1,2]. Among the major malignancies of the GI tract, data obtained from the GLOBOCAN database for 2020 estimated that there were more than 600,000 new cases of esophageal cancer [3]. Using the same database, the patterns of gastric cancer analysis estimated that there were 1.1 million new cases [4]. Similarly, the incidence of colorectal cancer has been increasing at an alarming rate, with an estimated 1.9 million new cases worldwide in 2020 [5]. Although patients with colorectal cancer who are diagnosed at early stage usually have a favorable prognosis [6], but the increasing incidence among young adults over the last few decades [7,8] is a major

concern. Even though the prognosis of GI cancers in general, could be better among younger patients, the overall burden is greater, and the outcome can be worse than those of non-GI cancers [1]. The burden of GI cancers can be very significant in young patients given that they have a long life expectancy and constitute the major contributors to the economy and family support [9]. Although breast, prostate, and lung cancers are highly prevalent, GI cancers rank first in terms of incidence and mortality and account for significant socioeconomic burden. The incidence rates of GI cancers vary widely among different nations and even among different regions of each nation.

As recent studies indicate that most GI cancers share several common risk factors, such as smoking, alcohol ingestion, infections, dietary habits, and obesity [2,10], it has been hypothesized that their increase incidence could be attributed to progressive changes in the presence of these factors [11,12], apart from exposure to environmental factors, disparities in risk, prognosis, and survival of patients with GI cancers may depend much more on socioeconomic status than on genetic or geographical risk factors [13]. Chronic *H. pylori* infection leads to atrophic gastritis, followed by intestinal metaplasia of the stomach, and is considered a meaningful precursor lesion of gastric cancer [14]. *H. pylori* prevalence rates also vary widely among countries, from less than 40% in industrialized nations of Europe and North America to greater than 70% in South America, Africa, Eastern Europe, and East Asia [15,16]. Hepatitis B virus (HBV) and Hepatitis C virus (HCV), along with alcohol consumption, are considered the most risk factors for HCC worldwide. Nonalcoholic fatty liver disease is considered one of the most common causes of chronic liver diseases and a relevant cause of HCC [17]. The aim of this study was to demonstrate the high incidence of gastrointestinal tract cancer in Libya.

METHODS

Study design and setting

During the study period from: 2015 to 2021 a primary care polyclinic (family physician unit) in Janzour (western Tripoli-Libya) enrolled 2950 patients for this retrospective observational randomized study, and a consent form of all participants were obtained.

Procedure of data collection

All participants underwent a full history of gastrointestinal symptoms, including abdominal pain, abdominal distension, jaundice, hematemesis and/or melena, as well as weight loss and anemia. Individual's residence of either gender, and they were older than 15 years. Each subject underwent a thorough clinical examination, including an ultrasound of their abdomen and pelvis. Routine tests (CBC, U\|E\C, S. Iron, Ferritin, F.B.S, LFT, PT and Viral serology) were performed, tumor markers (α -feto protein, Ca19-9, CEA), upper and lower GIT endoscopy and a CT scan of the abdomen and pelvis.

Statistical analysis

The relevant data for the purpose of this study were obtained in predesigned case sheet. The collected data analyzed using statistical package for the social sciences (SPSS Inc. Released 2007. SPSS for Windows, Version 16.0, Chicago, SPSS Inc.), and descriptive statistics were used as mean, SD, and percentage. Chi square test was used to find the significance of difference between categorical variables, and p value less than 0.05 were considered significant.

RESULTS

The study's finding showed that between January 2015 and December 2021, there were 2950 patients who visited the family physician's office complaining of abdominal pain, 50 patients (1.7%) of them complaining of abdominal distension, none of them had history of jaundice, hematemesis or melena, but 10 patients (0.34%) had history of bleeding per rectum, weight loss recorded in 6 patients (0.20%) and symptoms and signs of anemia in 50 patients (1.7%) (Table 1).

Table 1. Clinical features of the study patients

Character	No. (%)
Abdominal pain	2950 (100)
Abdominal distension	50 (1.69)
Iron deficiency anemia	50 (1.69)
Bleeding per rectum	10 (0.34)
Weight loss	6 (0.20)

Of those, six patients (0.20%) had been diagnosed as gastrointestinal cancer cases, were two males who had been diagnosed with colorectal cancer, both complaining of abdominal pain and distension, their routine investigations showed iron deficiency anemia and tumor markers were negative, CT scan and colonoscopy revealed colorectal cancer. The rest of cases were four females who had been diagnosed with hepatocellular carcinoma (HCC) in two of them and they were complaining of epigastric and right hypochondrial pain diagnosed as HCC by US, CT scan and MRI, their investigations showed iron deficiency anemia with negative tumor markers. The last two females diagnosed with colorectal cancers, both complaining of abdominal pain, symptoms and signs of anemia and a history of bleeding per rectum in one of them, an abdominal ultrasonography, CT scan abdomen and pelvis, upper and lower GIT endoscopy which showed evidence of colorectal cancer (Fig. 1). The study showed that gastrointestinal cancer is more common in females with male: female ratio 1:2. All of the cases were middle-aged (50 ± 10) years.

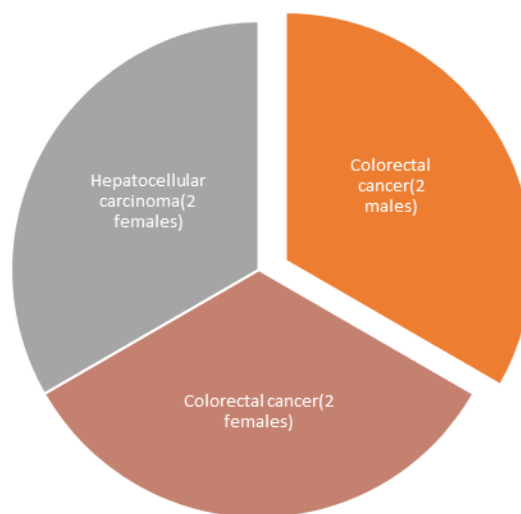


Figure 1. Types of gastrointestinal cancers

All these gastrointestinal tract cancer patients resided within a 1-2 Kilometer radius of the family physician unit (a tiny geographic area of roughly 4 Km²).

This study demonstrates that six patients out of 2950 patients complaining of abdominal pain and living in a tiny geographic area of roughly 4 Km² were diagnosed with gastrointestinal tract cancer; this equates to 1 case per 500 patients attending a family physician with p value (0.002) which is highly significant and indicates high prevalence of gastrointestinal tract cancers in the community.

DISCUSSION

The incidence of gastrointestinal cancer in Libya has been increasing in recent years, and it is now one of the leading causes of cancer-deaths in the country. There are several factors that contribute to the high incidence of gastrointestinal cancer in Libya including (diet, smoking, lack of screening, limited access to healthcare).

The traditional Libyan diet is high in red meat, fried foods, and processed foods, which all are known to increase the risk of cancer, Smoking is a major risk factor for several types of cancers including gastrointestinal cancer. Unfortunately, smoking is prevalent in Libya particularly among men, Lack of screening as regular screening tests for gastrointestinal cancer can detect the disease in its early stages when it is more treatable. However, many Libyans do not have access to screening tests or do not get screened regularly and Limited access to healthcare as Libya's healthcare system has been severely impacted by years of conflict and political instability, which has led to a lack of medical facilities and qualified healthcare professionals.

According to the World Health Organization's Globocan 2020 report, which provide estimates of cancer incidence and mortality worldwide, the most commonly occurring gastrointestinal tract cancers in Libya in 2020 were, Colorectal cancer 1,123 new cases and 701 deaths, stomach cancer 634 new cases and 489 deaths, esophageal cancer 290 new cases and 229 deaths. It's important to note that these are estimates, and the actual number of cases and deaths may be different due to variations in data collection and reporting, additionally, these numbers may have changed over

time due to various factors such as changes in population demographics, lifestyle factors, and improvement in cancer detection and treatment.

Compared to similar studies like the one done by I Elzouki 2018 for cancer incidence in western region of Libya, the study shows that colorectal cancer is the second most common cancer in both males and females [18], other study by Z Bodalal 2014 for cancers in eastern Libya which shows that the most common cancers in men were cancers of colon while it is the second in women [19].

According to Abdel-Naser et al, 2012 this is due to stomach cancer with *Helicobacter pylori* infection is prominent in eastern Libya during the period from 2000 to 2002 [20]. Cancer incidence in middle region of Libya by A Zarmouh 2022 showed that colorectal cancer was the second in his study [21], and cancer incidence in southern Libya by EGusbi 2021 showed that colorectal cancer was the second most common cancer [22]. In Egypt a nine years of epidemiological changes of gastrointestinal cancer study done by R Aboelhassan 2019 conclude that males between ages 40 and 59 are more exposed to gastrointestinal cancer, mainly the cases of GIT cancer is predicted to further increase in the next 5 years [23].

This study demonstrates that six patients out of 2950 patients complaining of abdominal pain and living in a tiny geographic area of roughly 4 Km² were diagnosed with gastrointestinal tract cancer; this equates to 1 case per 500 patients attending a family physician which is highly significant and indicates high prevalence of gastrointestinal tract cancers in the community.

According to the World Health Organization(WHO), gastrointestinal cancer is one of the most common types of cancer worldwide. In 2020, it was estimated that there were approximately 4.1 million new cases of gastrointestinal cancer and 3.4 million deaths globally. Colorectal cancer was the most common type, followed by stomach cancer and liver cancer. There are ongoing efforts to improve cancer diagnosis and treatment in Libya, but the country has faced significant challenges in recent years due to political instability and conflict, which have affected the healthcare system, and the country still faces significant challenges in providing adequate cancer care. Addressing these challenges will require sustained investment and support from both national and international organization.

CONCLUSION

We need a program to improve health services in order to enable early detection and management of gastrointestinal tract cancer since there was one occurrence per 500 individuals complaining of abdominal pain. Additional research, education for medical professionals, screening, and discussion of the significance of ongoing epidemiological and etiological investigations are all required due to the increased incidence of gastrointestinal tract cancer in Libya.

Conflict of interest. Nil

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انتشار سرطان الجهاز الهضمي في الجزء الغربي من ليبيا

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المستخلص

الخلفية والأهداف. تتزايد معدلات الإصابة بالسرطان على مستوى العالم ، وقد ارتفعت في ليبيا على مدى السنوات العشر الماضية. ومع ذلك ، فقد تم إجراء القليل من الأبحاث حول معدلات الإصابة بسرطان الجهاز الهضمي وتوزيعه ، وهو أمر بالغ الأهمية لفهم علم الأوبئة المحلية ومكافحة السرطان. الهدف من هذه الدراسة هو إثبات ارتفاع معدل الإصابة بسرطان الجهاز الهضمي في ليبيا. **طرق الدراسة.** من عام 2015 إلى عام 2021 ، سجلت مستوصف الرعاية الأولية (وحدة طبيب الأسرة) في جنزور (غرب طرابلس-ليبيا) 2950 مريضاً لهذه الدراسة العشوائية القائمة على الملاحظة بأثر رجعي. **النتائج.** أظهرت نتائج الدراسة أنه بين يناير 2015 وديسمبر 2021 ، كان هناك 2950 مريضاً زاروا مكتب طبيب الأسرة. من بين هؤلاء ، تم تشخيص ستة مرضى بسرطان الجهاز الهضمي ، بما في ذلك اثنان من الذكور تم تشخيصهم بسرطان القولون والمستقيم وأربع إناث تم تشخيص إصابتهن بسرطان الخلايا الكبدية (HCC) في اثنتين منهم ، في حين تم تشخيص اثنتين أخريين من سرطان القولون والمستقيم ، مع ذكر. نسبة الإناث 1: 2. جميع الحالات كانت في منتصف العمر (50 - 10) سنوات ، واشتكى جميع المرضى من آلام في البطن. أقام جميع مرضى سرطان الجهاز الهضمي هؤلاء ضمن دائرة نصف قطرها 1-2 كيلومتر من وحدة طبيب الأسرة (منطقة جغرافية صغيرة تبلغ حوالي 4 كيلومترات مربعة). توضح هذه الدراسة أن ستة مرضى من أصل 2950 مريضاً يشكون من آلام في البطن ، تم تشخيصهم بسرطان الجهاز الهضمي. هذا يعادل حالة واحدة لكل 500 مريض يحضرون لطبيب الأسرة. **الخاتمة.** البحث، والتعليم للمهنيين الطبيين ، والفحص ، ومناقشة أهمية التحقيقات الوبائية والمسببية المستمرة كلها مطلوبة بسبب زيادة الإصابة بسرطان الجهاز الهضمي في ليبيا.

الكلمات الدالة. الجهاز الهضمي ، السرطان ، الدراسة ، المرضى.